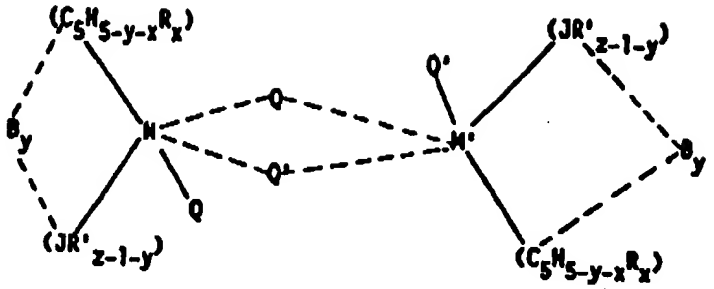
or



wherein "M" is Zr, Hf or Ti;

$(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to five substituent groups "R", "x" is 0, 1, 2, 3, 4, or 5 denoting the degree of substitution, and each substituent group "R" is, independently, a radical selected from a group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals wherein one or more hydrogen atoms is replaced by a halogen atom, C_1-C_{20} hydrocarbyl-substituted metalloid radicals wherein the metalloid is selected from the Group IV A of the Periodic Table of Elements, and halogen radicals or $(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring in which two adjacent "R" groups are joined forming C_4-C_{20} ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_{z-1-y}) is a heteroatom legand in which "J" is an element with a coordination number of three from Group V A or an element with a coordination number of two from Group VI A of the Periodic Table of Elements, and each "R'" is, independently a radical selected from a group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals wherein one or more hydrogen atoms is replaced by a halogen atom, and "z" is the coordination number of the element "J";

each "Q" is, independently any univalent anionic ligand or two "Q"'s are a divalent anionic chelating ligand;

"y" is 0 or 1 when "w" is greater than 0; "y" is 1 when "w" is 0;

"B" is a covalent bridging group containing a Group IV A or V A element;

"L" is a Lewis base where "w" denotes a number from 0 to 3;